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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/708,171	02/12/2004	Shin Su	12681-US-PA	2170

31561 7590 03/23/2005

JIANQ CHYUN INTELLECTUAL PROPERTY OFFICE
7 FLOOR-1, NO. 100
ROOSEVELT ROAD, SECTION 2
TAIPEI, 100
TAIWAN

EXAMINER

WARREN, MATTHEW E

ART UNIT	PAPER NUMBER
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2815

DATE MAILED: 03/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/708,171	SU ET AL.	
	Examiner	Art Unit	
	Matthew E. Warren	2815	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 December 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This Office Action is in response to the Amendment filed on December 28, 2004.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schroder (US 6,215,135 B1) in view of Chen et al. (US 6,016,002).

In re claim 1, Schroder shows (fig. 1) an electro-static discharge (ESD) protection circuit for a dual polarity input/output (I/O) pad, comprising: a substrate (SBSTR) of first conductivity type; a deep well region of second conductivity type (WLL) disposed in the substrate of first type; a first transistor (MP) disposed over the well region of the first conductivity type, wherein the first transistor comprises a first gate (g2), a first source (d5) and a first drain (d4); a second transistor (MN) disposed over the substrate of the first conductivity type, wherein the second transistor comprises a second gate (g1), a second source (d1) and a second drain (d2), wherein the second source is connected with the first drain (in the same well WLL), and wherein the second source and the first drain are disposed in a portion of the second conductivity type deep well region and a portion of the first conductivity type substrate; a first doped region (d6) is disposed in the well region and laterally adjacent to the first source (d5), wherein the first doped region,

the first source and the first gate are electrically connected to an input pad (part of VDD); and a second doped region (d3), disposed in the substrate of first type and laterally adjacent to the second drain (d2), wherein the second doped region, the second drain and the second gate are electrically connected to an output pad (part of Vss). Schroder shows all of the elements of the claims except the well region of the first type disposed in the deep well region of the second type. Chen et al. shows (fig. 4) an ESD protection circuit for an SCR in which a well (100) of a second conductivity type is formed in a deep well (98) of a first conductivity type. The well of the second conductivity type being part of the improvement (as compared to prior art figure 2) provides an ESD circuit in which a trigger voltage is automatically adjusted to different trigger voltage levels in response to power being applied to the circuit (col. 1, lines 55-67). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the deep well of Schroder by adding a second well of a second conductivity type as taught by Chen to provide an ESD protection device that can adjust to a different trigger voltage in response to power being applied.

In re claims 2-6, Schroder discloses (col. 2, lines 36-67) that the substrate is a p-type, the deep well of the second type is an n-type well region, and the transistor (MN) is an NMOS transistor. The dope regions comprise a p-type region. Chen shows (fig. 4) that the well region (100) of the first type is also a p-type well region.

In re claims 7 and 8, the combined invention of Schroder and Chen inherently performs the same function during a positive or negative electro-static current because

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the combined invention has the same structure and materials as the applicant's claimed invention.

Response to Arguments

Applicant's arguments filed with respect to claims 1-8 have been fully considered but they are not persuasive. The applicant primarily asserts that the combination of Schroder and Chen does not show all of the elements of the claims, specifically that Chen cannot be combined with Schroder because the structure of Schroder would be changed. The examiner believes that the combination is proper and that Schroder and Chen show all of the elements of the claims. Schroder only lacked a well of a second conductivity type formed in a well of a first conductivity type. Chen was cited to cure the deficiencies of Schroder by disclosing the well. As stated in the rejection above, the addition of the well of the second conductivity type allows the device to adjust the trigger voltage level in response to the power applied. Such an addition would not take away from Schroder because Schroder already taught the rest of the elements of the claims. Chen's well can be applied because to the device of Schroder without the rest of Chen's elements because the well is the novelty of the invention. Both inventions pertain the protection of an integrated circuit, meaning that the references are analogous. The components of each device can therefore be interchanged. For these reasons, the cited references show all of the elements of the claims and this action is made final.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew E. Warren whose telephone number is (571) 272-1737. The examiner can normally be reached on Mon-Thur and alternating Fri 9:00-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Thomas can be reached on (571) 272-1664. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MEW

March 17, 2005


TOM THOMAS
SUPERVISORY PATENT EXAMINER